WHAT IS CLAIMED IS:

1.   A mechanism for predicting a performance of a system constructed by a technique of combining a plurality of software components, the system performance prediction mechanism based on software component performance measurements, comprising:

component performance measurement means for previously measuring system resource utilizations of individual software components constituting the system and storing them in a performance database;

transaction performance prediction means for predicting a system resource utilization of a transaction to be processed by the system from a result of searching a performance database in consideration of the software components and requests constituting a processing content of the transaction; and

system performance prediction means for predicting a system resource utilization of the entire system by inputting the system resource utilization of the transaction predicted by the transaction performance prediction means into a system performance prediction model.

2.   The system performance prediction mechanism according to claim 1, wherein the system resource utilization measurements of the individual software components by said component performance measurement means are made by analyzing an event trace obtained by a

measurement using both of an application probe for detecting an event having been inserted in a test driver and occurred in a component to be measured and a kernel probe for detecting an event having been inserted in an

5   operating system and occurred in a system to be measured.

3.   The system performance prediction mechanism according to claim 1, wherein the system resource utilization measurements of the individual software components by said component performance measurement means

10   are made by using a system resource utilization measuring function provided by basic software such as an operating system.

4.   The system performance prediction mechanism according to claim 1, wherein the system resource

15   utilization prediction of the entire system by said system performance prediction means is made by determining operating conditions, under which the software components operate, from the software components and requests constituting the processing content of the transaction to

20   be processed by the system, determining system resource utilizations by searching the performance database using each software component and operating conditions as keys, predicting the system resource utilization of the transaction by combining results of searching for the

25   system resource utilizations of all software components involved in processing of a transaction important in the system performance, and combining the obtained results and

inputting them into the system performance prediction model.

5. The system performance prediction mechanism according to claim 1, wherein the system resource utilization prediction of the entire system by said system performance prediction means is made by inputting the system resource utilizations predicted by said transaction performance prediction means with respect to individual transactions into the system performance prediction model together with a transaction execution ratio if there are plural types of transactions to be processed by the system and their execution ratio is previously defined as system design information.

6. The system performance prediction mechanism according to claim 4, wherein the system resource utilization prediction of the entire system by said system performance prediction means is made by inputting the system resource utilizations predicted by said transaction performance prediction means with respect to individual transactions into the system performance prediction model together with a transaction execution ratio if there are plural types of transactions to be processed by the system and their execution ratio is previously defined as system design information.

7. The system performance prediction mechanism according to claim 1, wherein the system resource utilization is represented by CPU time.

8.   The system performance prediction mechanism according to claim 2, wherein the system resource utilization is represented by CPU time.

9.   The system performance prediction mechanism according to claim 3, wherein the system resource utilization is represented by CPU time.

10.   The system performance prediction mechanism according to claim 4, wherein the system resource utilization is represented by CPU time.

11.   The system performance prediction mechanism according to claim 5, wherein the system resource utilization is represented by CPU time.

12.   A method of predicting a performance of a system constructed by a technique of combining a plurality of software components, the system performance prediction method based on software component performance measurements, comprising the steps of:

previously measuring system resource utilizations of individual software components constituting the system and storing them in a performance database;

predicting a system resource utilization of a transaction to be processed by the system from a result of searching a performance database in consideration of the software components and requests constituting a processing content of the transaction; and

predicting a system resource utilization of the entire system by inputting the predicted system resource

utilization of the transaction into a system performance prediction model.

13. The system performance prediction method according to claim 12, wherein, in the step of measuring the system resource utilizations of the individual software components, the system resource utilizations of the individual software components are determined by analyzing an event trace obtained by a measurement using both of an application probe for detecting an event having been inserted in a test driver and occurred in a component to be measured and a kernel probe for detecting an event having been inserted in an operating system and occurred in a system to be measured.

14. The system performance prediction method according to claim 12, wherein, in the step of measuring the system resource utilizations of the individual software components, the system resource utilizations of the individual software components are determined by using a system resource utilization measuring function provided by basic software such as an operating system.

15. The system performance prediction method according to claim 12, wherein, in the step of predicting the system resource utilization of the entire system, the system resource utilization of the entire system is predicted by determining operating conditions, under which the software components operate, from the software components and requests constituting the processing content

of the transaction to be processed by the system, determining system resource utilization by searching a performance database using each software component and operating conditions as keys, predicting the system resource utilization of the transaction by combining results of searching for the system resource utilizations of all software components involved in processing of a transaction important in the system performance, and combining the obtained results and inputting them into the system performance prediction model.

16. The system performance prediction method according to claim 12, wherein, in the step of predicting the system resource utilization of the entire system, the system resource utilization of the entire system is predicted by inputting the system resource utilizations predicted by said transaction performance prediction means with respect to individual transactions into the system performance prediction model together with a transaction execution ratio if there are plural types of transactions to be processed by the system and their execution ratio is previously defined as system design information.

17. The system performance prediction method according to claim 15, wherein, in the step of predicting the system resource utilization of the entire system, the system resource utilization of the entire system is predicted by inputting the system resource utilizations predicted by said transaction performance prediction means

with respect to individual transactions into the system performance prediction model together with a transaction execution ratio if there are plural types of transactions to be processed by the system and their execution ratio is

5 previously defined as system design information.

18. The system performance prediction method according to claim 12, wherein the system resource utilization is represented by CPU time.

19. The system performance prediction method

10 according to claim 13, wherein the system resource utilization is represented by CPU time.

20. The system performance prediction method according to claim 14, wherein the system resource utilization is represented by CPU time.

15 21. The system performance prediction method according to claim 15, wherein the system resource utilization is represented by CPU time.

22. The system performance prediction method according to claim 16, wherein the system resource

20 utilization is represented by CPU time.

23. A program for helping a computer function as:

component performance measurement means for previously measuring system resource utilizations of

25 individual software components constituting a system and storing them in a performance database;

transaction performance prediction means for

predicting a system resource utilization of a transaction to be processed by the system from a result of searching a performance database in consideration of the software components and requests constituting a processing content

5   of the transaction; and

system performance prediction means for predicting a system resource utilization of the entire system by inputting the system resource utilization of the transaction predicted by the transaction performance

10   prediction means into a system performance prediction model.

24.   The program according to claim 23, wherein the system resource utilization measurements of the individual software components by said component

15   performance measurement means are made by analyzing an event trace obtained by a measurement using both of an application probe for detecting an event having been inserted in a test driver and occurred in a component to be measured and a kernel probe for detecting an event having

20   been inserted in an operating system and occurred in a system to be measured.

25.   The program according to claim 23, wherein the system resource utilization measurements of the individual software components by said component

25   performance measurement means are made by using a system resource utilization measuring function provided by basic software such as an operating system.

26.   The program according to claim 23, wherein the system resource utilization prediction of the entire system by said system performance prediction means is made by determining operating conditions, under which the software components operate, from the software components and requests constituting the processing content of the transaction to be processed by the system, determining system resource utilization by searching said performance database using each software component and operating conditions as keys, predicting the system resource utilization of the transaction by combining results of searching for the system resource utilizations of all software components involved in processing of a transaction important in the system performance, and combining the obtained results and inputting them into the system performance prediction model.

27.   The program according to claim 23, wherein the system resource utilization prediction of the entire system by said system performance prediction means is made by inputting the system resource utilizations predicted by said transaction performance prediction means with respect to individual transactions into the system performance prediction model together with a transaction execution ratio if there are plural types of transactions to be processed by the system and their execution ratio is previously defined as system design information.

28.   The program according to claim 26, wherein

the system resource utilization prediction of the entire
system by said system performance prediction means is made
by inputting the system resource utilizations predicted by
said transaction performance prediction means with respect
5   to individual transactions into the system performance
prediction model together with a transaction execution
ratio if there are plural types of transactions to be
processed by the system and their execution ratio is
previously defined as system design information.

10   29.   The program according to claim 23, wherein
the system resource utilization is represented by CPU time.

          30.   The program according to claim 24, wherein
the system resource utilization is represented by CPU time.

          31.   The program according to claim 25, wherein
15   the system resource utilization is represented by CPU time.

          22.   The program according to claim 26, wherein
the system resource utilization is represented by CPU time.

          33.   The program according to claim 27, wherein
the system resource utilization is represented by CPU time.

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